

WHAT IS CLAIMED IS:

- 1                   1.     A device for use with a metering device for measuring analyte  
2     levels, said device comprising:  
3                   a cartridge;  
4                   a plurality of analyte detecting members mounted on said cartridge.
- 1                   2.     The device of claim 1 wherein said cartridge does not include any  
2     penetrating members.
- 1                   3.     The device of claim 1 wherein said cartridge has a radial disc  
2     shape.
- 1                   4.     The device of claim 1 wherein said cartridge is sized to fit within  
2     said metering device.
- 1                   5.     The device of claim 1 wherein said analyte detecting members  
2     wherein only a working electrode is covered with a glucose oxidase.
- 1                   6.     The device of claim 1 wherein said analyte detecting members  
2     include working and counter electrodes formed from one of the following: Ag or Ag/Cl.
- 1                   7.     The device of claim 1 wherein said analyte detecting members  
2     have different sensitivity ranges enhancing the overall range of sensitivity of an array of  
3     such members when used on a single fluid sample.
- 1                   8.     The device of claim 1 wherein said analyte detecting members can  
2     provide their analysis requiring no more than one of the following volumes: 300, 200,  
3     100, 60, 50, 30, 20, 15, 10, and 5 nanoliters.
- 1                   9.     The device of claim 1 wherein said analyte detecting member  
2     comprises a working electrode, a reference electrode, and counter electrode, wherein only  
3     the working electrode is covered with a redox mediator.
- 1                   10.    The device of claim 1 said analyte detecting members use an  
2     amperometric measurement technique.

1           11.     The device of claim 1 further comprising a mesh configured fluid  
2 spreader positioned over said analyte detecting member.

1           12.     The device of claim 1 further comprising a hydrophilic membrane  
2 positioned over said analyte detecting member. 4.53 cubic centimeters

1           13.     The device of claim 1 wherein the cartridge has a higher density of  
2 analyte detecting members than 4.53 cubic centimeters divided by 17 per single analyte  
3 detecting member..

1           14.     The device of claim 1 wherein the cartridge has a higher density of  
2 analyte detecting members than 4.53 cubic centimeters divided by 20 per single analyte  
3 detecting member.

1           15.     The device of claim 1 wherein the cartridge has a higher density of  
2 analyte detecting members than 4.53 cubic centimeters divided by 25 per single analyte  
3 detecting member.

1           16.     The device of claim 1 wherein the cartridge has a higher density of  
2 analyte detecting members than 4.53 cubic centimeters divided by 50 per single analyte  
3 detecting member.

1           17.     A device for use with a body fluid sampling device for extracting  
2 bodily fluid from an anatomical feature, said device comprising:  
3                 a cartridge having a plurality of sample chambers;  
4                 a plurality of analyte detecting members;  
5                 wherein at least one of said analyte detecting members forms a portion of  
6 one wall of one of said plurality of sample chambers.

1           18.     The device of claim 17 wherein said cartridge comprises a  
2 connector disc and an analyte detecting member disc.

1           19.     A device for use with a body fluid sampling device for extracting  
2 bodily fluid from an anatomical feature, said device comprising:  
3                 a cartridge having a plurality of sample chambers;

4 a plurality of penetrating members each at least partially contained in said  
5 cavities of the single cartridge wherein the penetrating members are slidably movable to  
6 extend outward from openings on said cartridge to penetrate tissue;

7 a plurality of analyte detecting members;

8 wherein said chamber is positioned substantially adjacent an outer  
9 periphery of said cartridge;

10 at least one opening in one of said sample chambers leading fluid along a  
11 fluid path towards one of said analyte detecting members.

1 20. The device of claim 19 wherein said fluid path contains a channel  
2 sized to hold no more than 1 microliter.

1 21. A method for determining a concentration of an analyte in body  
2 fluid, comprising:

3 collecting a sample of body fluid of about 500 nL or less;  
4 covering an electrochemical sensor with at least a portion of the sample;  
5 determining the concentration of the analyte in the sample using a  
6 potentiometric technique.

1 22. A device comprising:  
2 a plurality of analyte detecting members defining an array;  
3 wherein at least two of said members have different sensitivity ranges  
4 enhancing the overall range of sensitivity of the array when used on a sample fluid.

1 23. A device comprising:  
2 a single cartridge having a plurality of cavities;  
3 a plurality of analyte detecting members defining an analyte array;  
4 wherein at least two of said sensors have different sensitivity ranges  
5 enhancing the overall range of sensitivity of the array when used on a sample fluid;  
6 wherein said plurality of cavities each has one analyte array.

1 24. A system comprising:  
2 an electric penetrating member driver;  
3 a single cartridge having a plurality of cavities;  
4 a plurality of penetrating members housed in said cavities and individually  
5 movable by said driver to penetrate tissue;

- 6 a plurality of analyte detecting members defining an analyte array;  
7 wherein at least two of said sensors have different sensitivity ranges  
8 enhancing the overall range of sensitivity of the array when used on a sample fluid;  
9 wherein said plurality of cavities each has one analyte array.